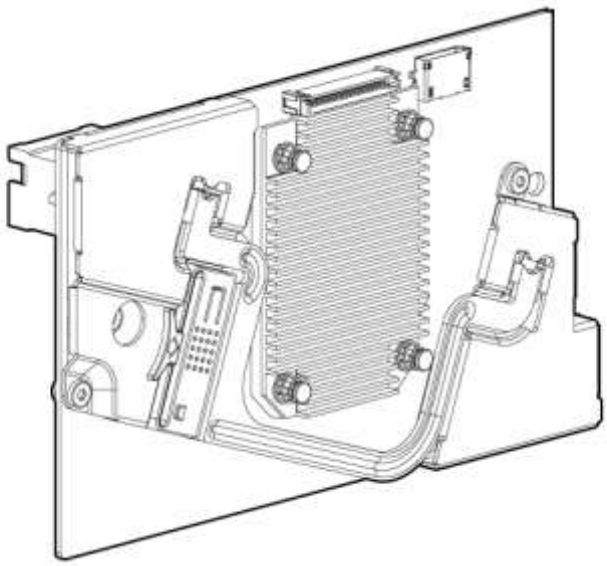
Overview

HP H244br Host Bus Adapter

The HP H244br Smart Host Bus Adapter comes in a Flexible Smart SAS HBA form factor that provides a reliable, high performing 12G/s SAS connectivity to the internal drives in the ProLiant BL460c Gen9 server. The H244br Smart Host Bus Adapter provides flexibility to run as an HBA mode or simple RAID mode. When operating in simple RAID mode, it provides RAID 0, RAID 1, and RAID 5 with optional HP Secure Encryption capabilities. Unlike the HP Smart Array Controllers, the H244br does not offer any acceleration or support cache modules.



Model

Host Bus Adapter	HP H244br 12Gb 2-ports Int Smart Host Bus Adapter	726809-B21

Kit contents

- HP H244br Smart Host Bus Adapter

Compatibility

Compatibility

Servers

ProLiant BL (Blade Servers):

- HP ProLiant BL460 Gen9

Standard Features

Performance	Designed to be as flexible as HP servers, HP H244br Host Bus Adapter provides support for both SAS and SATA HDDs and solid state drives. The HP adapter delivers exceptional system performance, with two 12Gb/s SAS ports providing up to 24Gb/s total storage bandwidth. HP's High Performance Architecture sets new boundaries for industry performance expectations! • 12Gb/s SAS (bandwidth per physical link) • 24Gb/s total available bandwidth (2 physical links x 12Gb/s) • PCIe 3.0 host interface x8 (8GT/s bandwidth)
HP Server Integration	Fully integrated and tested with ProLiant servers and management software.
Key Features	• SAS technology delivers high performance and data bandwidth up to 12Gb/s per physical link • Mix-and-match SAS and SATA hard drives; deploy drive technology as needed • PCIe 3.0 x8 (8GB/s bandwidth)
Ports	Two (2) SAS physical links distributed across 2 x1 internal Mini-SAS connectors
HP Secure Encryption	HP Secure Encryption is a Smart HBA controller-based (running in RAID mode only) data encryption solution for ProLiant Gen9 servers that protects sensitive, mission critical data. This is an enterprise-class encryption solution for data at rest on any bulk storage attached (with the exception of tape or external arrays such as the P2000 or MSA 2040) to the supported HP Smart Array Px4x family of controllers including data on the cache memory of the controller. The solution is available for both local and remote key management mode deployments. Local Key Management Mode is focused on single server deployment where there is one Master key per controller that is managed by the user. All volumes still have their own unique key(s) for data encryption. Remote Key Management Mode is for enterprise wide deployments and requires HP Integrated Lights Out (iLO) Advanced or Scale Out editions v2.0 or later and HP Enterprise Secure Key Manager (ESKM) 3.1 or any later release. The HP ESKM manages all the encryption deployments from just a few servers to thousands of servers and 2 million keys per HP ESKM 3.1 cluster. For more information please visit www.hp.com/go/hpsecureencryption
Capacity	Fulfilling the need for high performance and capacity expansion, the HP H244br SAS HBA offers: • Two 12Gb/s SAS physical links • Capacity up to 2.4TB
Form Factor	• Flexible Smart Host Bus Adapter
Operating Systems	Microsoft Windows Server 2012 R2 Microsoft Windows Server 2012 Microsoft Windows Server 2008 R2 Microsoft Windows Hyper-V 2012 Microsoft Windows Hyper-V 2008 Red Hat Enterprise Linux 7 Red Hat Enterprise Linux 6 U5 SUSE Linux Enterprise Server 12 (Support pending) SUSE Linux Enterprise Server 11 Solaris 11.1* Canonical Ubuntu 14.04*

Standard Features

	Canonical Ubuntu 12.04* **NOTE:** For more Linux OS support & certification information, please visit our the ProLiant & BladeSystem Server Linux matrix: http://h18004.www1.hp.com/products/servers/linux/hplinuxcert.html
Firmware flashing	HP Smart Component for HP H244br Host Bus Adapter
Warranty	The warranty for this device is 1 year parts only. **Warranty Upgrade Options** • Response - Upgrade on-site response from next business day to same day 4 hours • Coverage - Extend hours of coverage from 9 hours x 5 days to 24 hours x 7 days • Duration - Select duration of coverage for a period of 1, 3, or 5 years • Warranty upgrade options can come in the form of Care Packs, which are sold at the HP System level this product attaches too

Service and Support

Service and Support

HP Technology Services
HP Technology Services offers you technical consultants and support expertise to solve your most complex infrastructure problems. We help keep your business running, boost availability, and avoid downtime.

Protect your business beyond warranty with HP Care Pack Services
When you buy HP Options, it's also a good time to think about what level of service you may need. HP Care Pack services provide total care and support expertise with committed response choices designed to meet your IT and business need.

HP Foundation Care services deliver scalable support-packages for HP industry-standard servers and software. You can choose the type and level of service that is most suitable for your business needs. New to this portfolio is HP Collaborative Support. If you are running business critical environments, HP offers Proactive Care or Critical Advantage. These services help you deliver high levels of application availability through proactive service management and advanced technical response.

Here is the support service recommendation from the Foundation Care and Proactive Care portfolio. For customized support service solution, HP can work with you to tailor a service solution for your unique support requirements using broader services portfolio of Foundation Care and Proactive Care.

Recommended HP Care Pack Services for optimal satisfaction with your HP product

Recommended Services

3-Year HP 24x7 4 hour Response, Proactive Care
Helps optimize your systems and delivers high levels of application availability through proactive service management and advanced technical response. A skilled Technical Manager will own your query or issue end to end until resolved, delivering a single point of contact for you

OR

3-Year HP 24x7 4 hour Response, HP Collaborative Support
Provides problem resolution support across the stack of HW, firmware, and HP and 3rd party SW. In case the issue is with 3rd party SW, HP does known issue resolution. If HP cannot solve the issue, it will contact the third-party vendor and create a problem incident on your behalf
http://h20195.www2.hp.com/V2/GetPDF.aspx/4AA3-8232ENW.pdf

HP Installation of ProLiant Add On Options Service
This easy-to-buy, easy-to-use HP Care Pack service helps ensure that your new HP hardware or software is installed smoothly, efficiently, and with minimal disruption of your IT and business operations

Related HP Care Pack Services to enhance your HP product experience

Related Services

3-Year HP 24x7 4 hour Response, Proactive Care
Helps optimize your systems and delivers high levels of application availability through proactive service management and advanced technical response. A skilled Technical Manager will own your query or issue end to end until resolved, delivering a single point of contact for you

OR

3-Year HP 24x7 4 hour Response, Hardware Support Onsite Service
Provides you with rapid remote support and if required an HP authorized representative who will arrive on site any time and day of the year to begin hardware maintenance service within 4 hours of the service request being logged
http://h20195.www2.hp.com/V2/GetPDF.aspx/5982-6547EEE.pdf

Service and Support

	3-Year HP 6-hour Onsite Call-to-Repair, HP Collaborative Support Offers customers a single point of contact for server problem diagnosis, hardware problem resolution to return the hardware in operating condition within 6 hours of the initial service request to the HP Global Solution Center, and basic software problem diagnosis, fault isolation, and resolution if available to HP. http://h20195.www2.hp.com/V2/GetPDF.aspx/4AA3-8232ENW.pdf **HP Proactive Select Service** Provides a flexible way to purchase HP best-in-class consultancy and technical services. You can buy Proactive Select Service Credits when you purchase your hardware and then use the credits over the next 12 months. http://h20195.www2.hp.com/V2/GetPDF.aspx/4AA2-3842ENN.pdf
Insight Remote Support	Provides 24 X 7 remote monitoring, proactive notifications, and problem resolution. Learn more http://www.hp.com/go/insightremotesupport
HP Support Center	Personalized online support portal with access to information, tools and experts to support HP business products. Submit support cases online, chat with HP experts, access support resources or collaborate with peers. Learn more http://www.hp.com/go/hpsc HP's Support Center Mobile App* allows you to resolve issues yourself or quickly connect to an agent for live support. Now, you can get access to personalized IT support anywhere, anytime. HP Insight Remote Support and HP Support Center are available at no additional cost with a HP warranty, HP Care Pack or HP contractual support agreement. *HP' Support Center Mobile App is subject to local availability
Parts and materials	HP will provide HP-supported replacement parts and materials necessary to maintain the covered hardware product in operating condition, including parts and materials for available and recommended engineering improvements. Supplies and consumable parts will not be provided as part of this service; standard warranty terms and conditions apply. Parts and components that have exceeded their maximum supported lifetime and/or the maximum usage limitations as set forth in the manufacturer's operating manual or the technical product data sheet will not be provided, repaired or replaced as part of this service.
Warranty / Service Coverage	For ProLiant servers and storage systems, this service covers HP-branded hardware options qualified for the server, purchased at the same time or afterward, internal to the enclosure, as well as external monitors up to 22" and tower UPS products; these items will be covered at the same service level and for the same coverage period as the server unless the maximum supported lifetime and/or the maximum usage limitation has been exceeded. Coverage of the UPS battery is not included; standard warranty terms and conditions apply. The defective media retention service feature option applies only to Disk or eligible SSD/Flash Drives replaced by HP due to malfunction. It does not apply to any exchange of Disk or SSD/Flash Drives that have not failed. SSD/Flash Drives that are specified by HP as consumable parts and/or that have exceeded maximum supported lifetime and/or the maximum usage limit as set forth in the manufacturer's operating manual or the technical data sheet are not eligible for the defective media retention service feature option.
For more information	To learn more on services for HP ESSN Options, please contact your HP sales representative or HP Authorized Channel Partner. Or visit: http://www.hp.com/services/proliant or www.hp.com/services/bladesystem

Technical Specifications

Dimensions (excluding bracket)	5.3 x 3.6 x 1.2 in (13.5 x 9.04 x 3.12 cm)
Disk Drive and Enclosure Protocol Support	12Gb/s SAS (Serial Attached SCSI) 6Gb/s SATA (Serial Advanced Technology Attachment)
Architecture	Serial Attached SCSI (SAS) Serial Advanced Technology Attachment (SATA)
SAS Connectors	2x1 internal
Data Transfer Method	12Gb/s per port for combined throughput of up to 24Gb/s
PCIe Bus Speed	PCIe 3.0 x8 (8GT/s maximum bandwidth)
Simultaneous Connection Transfer Ports	2 x 1 Wide SAS Connectors
Port Transfer Rate	24Gb/s per x1 SAS Port (2 x 12Gb/s)
Software upgradeable Firmware	Yes
Maximum Capacity	2.4TB SAS, 2.4TB SATA
Memory Addressing	64-bit, supporting servers memory greater than 4GB

Environment-friendly Products and Approach	**End-of-life Management and Recycling**	Hewlett-Packard offers end-of-life HP product return, trade-in, and recycling programs in many geographic areas. For trade-in information, please go to: http://www.hp.com/go/green. To recycle your product, please go to: http://www.hp.com/go/green or contact your nearest HP sales office. Products returned to HP will be recycled, recovered or disposed of in a responsible manner. The EU WEEE directive (2002/95/EC) requires manufacturers to provide treatment information for each product type for use by treatment facilities. This information (product disassembly instructions) is posted on the Hewlett Packard web site at: http://www.hp.com/go/green. These instructions may be used by recyclers and other WEEE treatment facilities as well as HP OEM customers who integrate and re-sell HP equipment.

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For hard drives, 1GB = 1 billion bytes. Actual formatted capacity is less.